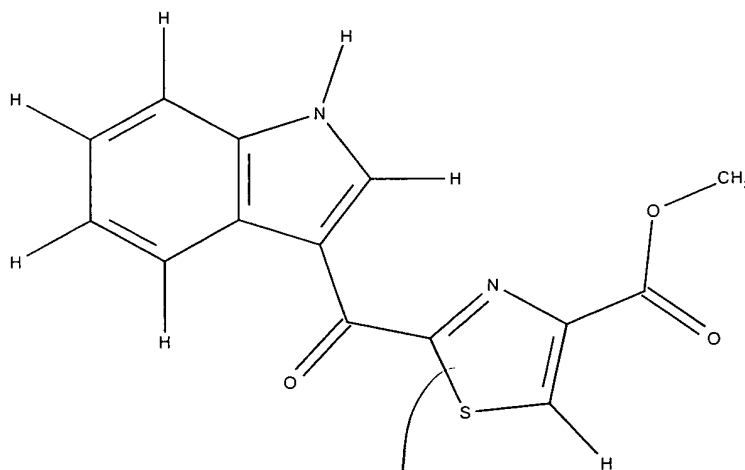


CLAIMS

We claim:

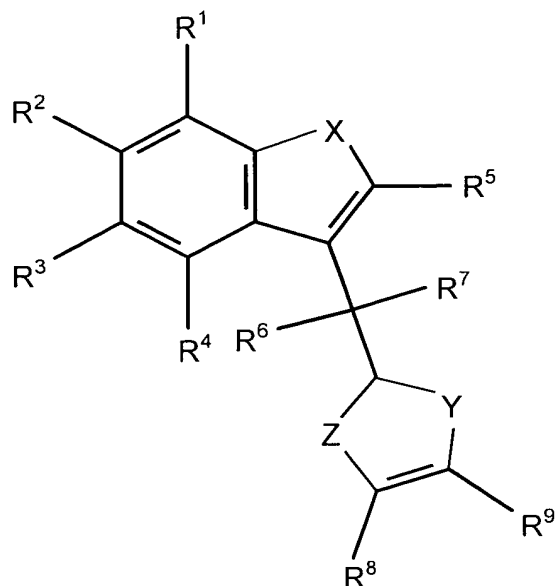
1. A preparation of the endogenous Ah receptor ligand.
2. The preparation of claim 1 wherein the ligand has the following

formula:



3. The preparation of claim 1 wherein the preparation is at least 90% pure.
4. The preparation of claim 3 wherein the preparation is at least 95% pure.
5. The preparation of claim 1 wherein the ligand is isolated from animal tissues.

6. A preparation of Ah receptor ligand analog, wherein the analog is of the formula:



Wherein

R^1 , R^2 , R^3 , R^4 , R^5 , and R^8 are selected from the group consisting of H, lower alkyl (1-5 carbons), Br, F, Cl, O-acyl (1-5 C) and OR^{10} where R^{10} =H, lower alkyl (1-5 C);

R^6 and R^7 taken together may be O; or

when R^6 =H, then R^7 can be H, OH, Br, F, Cl, OR^{11} where R^{11} =alkyl (1-5 C); or

when R^7 =H, then R^6 can be H, OH, Br, F, Cl, OR^{11} where R^{11} =alkyl (1-5 C);



R^9 can be $O-C-R^{12}$, wherein R^{12} is selected from the group consisting of alkyl (1-5 C), aryl, fluoromethyl, difluoromethyl, and trifluoromethyl; or



R^9 can be $-C-O-R^{13}$, where R^{13} is selected from the group consisting of alkyl (1-5 C), aryl, fluoromethyl, difluoromethyl, and trifluoromethyl; or



R⁹ can be —C—R¹⁴, where R¹⁴ is selected from the group consisting of alkyl (1-5

C), fluoromethyl, difluoromethyl, and trifluoromethyl; or

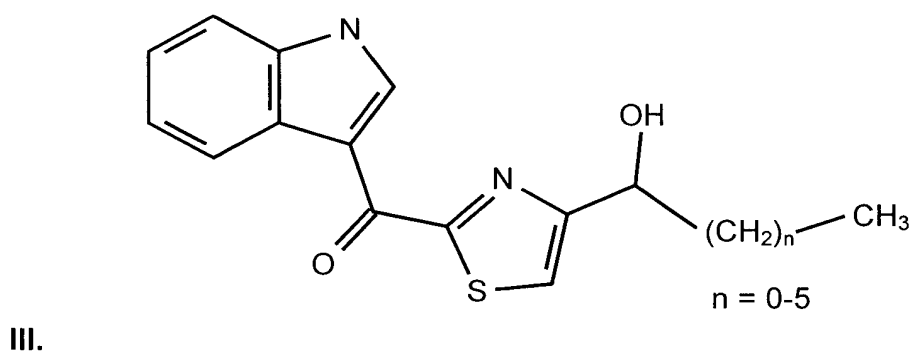
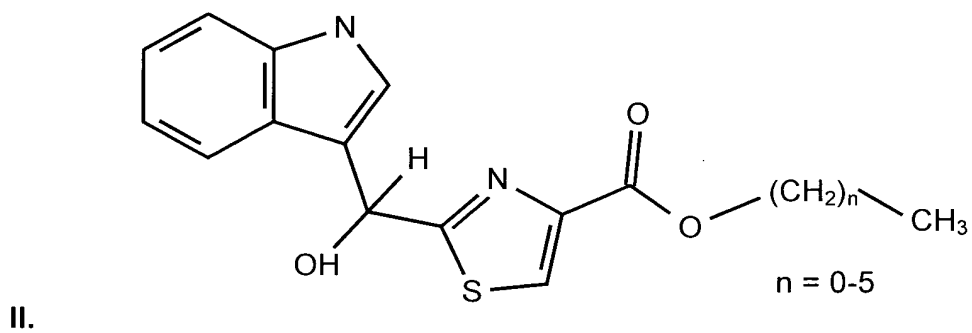
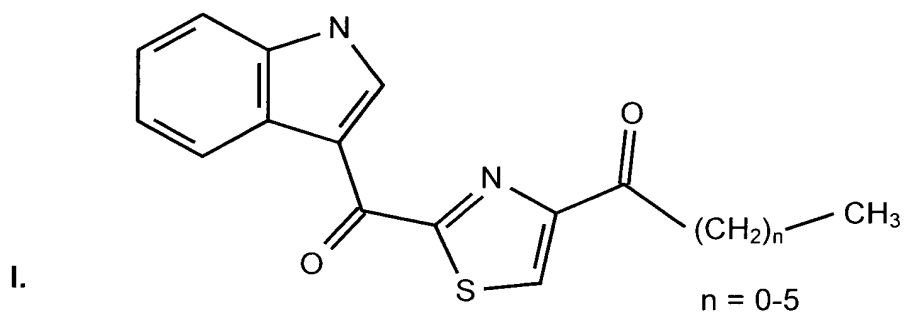


R⁹ can be —C—R¹⁵, where R¹⁵ is selected from the group consisting of alkyl

(1-5 C), fluoro methyl, difluoro methyl, and trifluoro methyl, and

X, Y, Z are selected from the group consisting of C, N, O, and S.

7. A preparation of Ah receptor ligand analog, wherein the analog is selected from the group consisting of I, II and III, wherein:



8. A method of preparing endogenous Ah receptor ligand comprising the steps of:

- a) obtaining and homogenizing an animal organ, wherein the organ contains the Ah receptor ligand, wherein a homogenate is formed,
- b) extracting the homogenate of step (a) with a solvent, wherein an extract is formed,
- c) heating the extract, and
- d) purifying the ligand through a chloroform gradient.

9. The method of claim 8 wherein the animal organ is selected for the group consisting of lung, liver, brain, bone, and muscle.

10. The method of claim 8 wherein the extraction is with methanol.

11. The method of claim 8 wherein the extract is flushed with nitrogen gas, stirred and centrifuged.

12. The method of claim 8 wherein the extract is heated at between 90°C-110°C with H₂SO₄.

13. The method of claim 8 wherein the extract is purified through silica batch purification.

14. The method of claim 8 wherein the ligand is further purified on HPLC columns.

15. The method of claim 8 further comprising the step of determining ligand activity.